Patient Presentation and History

A 95 year old male presented to our clinic for follow up on a previously diagnosed with solitary Merkel Cell Carcinoma three years ago. His medical history includes diabetes mellitus type 2, GERD, glaucoma, hypothyroidism for which he takes age appropriate medications. He also has a history of numerous non-melanoma skin cancers on the face and upper extremities in the past. The initial MCC was located on the patient’s forehead, and was treated with wide local excision. After the excision, patient was referred to Oncology for further surveillance. Follow up PET CT showed metastatic lesions in mediastinum, lungs, and colon. These were presumed to be metastatic MCC although a workup for a second primary tumor was completed. The patient then underwent treatment with radiation and etoposide with improvement in metastatic lesions. He was followed by Oncology with PET CT scans. He presented to our clinic with new nodular lesions as pictured in Figure 1 and Figure 2.

Histopathology

The histopathology of Merkel Cell Carcinoma is composed of scant cytoplasm and small round blue cells. The nuclei are atypical in appearance and tightly packed. The cells may form sheets or a trabecular array. These features are shown in Figure 3 and Figure 4. In addition, apoptotic cells, mitoses, and nuclear molding may also be seen. To differentiate among other tumors of small blue cells, special stains and immunostains can point to a diagnosis of MCC. CK20 is typically positive in MCC in a paranuclear pattern and will usually be negative in small cell lung carcinoma. Melanoma should also be considered in the differential of MCC, however it is usually S-100 positive and MCC is S-100 negative. Lymphoma will have positive hematopoietic markers, which are negative in MCC. Other markers of MCC include synaptophysin, chromogranin, and neuron-specific enolase.

Discussion

Merkel Cell Carcinoma (MCC) is a cutaneous neuroendocrine carcinoma, and has both epithelial and neuroendocrine differentiation. This aggressive tumor occurs most commonly on the head and neck of elderly patients in sun exposed areas. Concurrent overlying actinic keratosis or squamous cell carcinomas are frequently found on histopathology due to the occurrence chronically sun exposed areas. MCC can also occur less frequently on the extremities or trunk. MCC presents as an asymptomatic solitary nodule, which is rapidly growing.

MCC is usually a pink, blue, or red cutaneous or subcutaneous nodule. Regional lymphadenopathy may be present. MCC is more common in immunosuppressed patients and erythema ab igne sites, and may also associated with sun exposure and polyoma virus. Recurrence and metastatic rates of MCC are high despite treatment and has a 30-50% mortality rate at 2 years. The mnemonic “AEIOU” may be helpful in remembering the characteristic features of MCC.

Recently it is reported in the literature that 20% of MCCs are not caused by MCPyV (polyoma virus), and virus-negative MCC represent a more aggressive subtype which warrants a closer clinical follow-up after initial treatment. There are also new treatments emerging for MCC. Immune checkpoint blockade with anti-programmed death receptor 1 (PD-1) antibody for treatment of a patient with metastatic MCC (pembrolizumab) after the disease had progressed during therapy with oral etoposide.

References

